without any bony plates. The single specimen obtained had the peculiarity (most probably individual) that the lower canine tooth on one side, like a true Alligator's, fitted into a notch, and on the other side fitted into a concavity in the upper jaw as in the crocodiles. In most other characters, and especially in the belly being protected by bony plates, it agrees with the alligators of Brazil. Other specimens of this alligator are very desirable, to confirm the characters assigned to it.—J. E. Gray.

On the Habits of Hyalonema.

Dr. Gregory writes, "My friend Mr. Cramer, who is collecting plants for Mr. Veitch, has been down three or four times to fishing-villages at Inosima to look after the *Hyalonema*, and the whole of his researches point to this:—'The Japanese do not know where to find it, but occasionally it comes up in their nets, in deep water; they say it has the same appearance as when dried, and that it has no slime or gelatinous substance adhering to it.'"

Note on the Vitality of a Sponge of the Family Corticatæ (Tethya lyncurium, *Lamarck*), By M. Léon Vaillant.

The author has endeavoured to investigate the mode in which the Sponges repair accidental loss of substance, and to graft them upon each other in various ways. He employed principally *Tethya lyncurium*, Lamk., belonging to the section Corticatæ, O. Schmidt, which is common on the shores of Brittany, and the regular form and histological complication of which render it better fitted for experiment than the Halichondriæ.

Of these Sponges the author endeavoured to isolate the cortical and afterwards the medullary substances; he cut away portions taken in different directions, to observe the mode in which the reproduction of these tissues is effected, and their cicatrizations; and he attempted to graft *Tethya lyncurium* upon itself, and also various Sponges of the genera *Lycon*, *Halichondria*, *Reniera*, and *Polymastia* upon that species. From more than fifty experiments he draws the following conclusions:—

1. The two substances of which *Tethya lyncurium* is composed are mutually capable of reproduction, the isolated medullary substance reproducing the cortical substance, and *vice versâ*.

2. The vitality of the cortical substance is greater than that of the medullary—which is in relation to its histological constitution. It is able to produce prolongations capable of reproducing adherence. Its contractility is also more noticeable than that of the medullary substance, if, indeed, the latter possesses that property.

3. The cortical substance certainly plays a special protective part in the economy of the Sponge.

4. The grafting of individuals in this species is easy, but it requires a certain time for its completion.

5. The grafting of a different genus upon *Tethya lyncurium* has not hitherto succeeded.—*Comptes Rendus*, Jan. 11, 1869, tome lxviii. pp. 86–88.